

**REMARKS**

This is in response to the Office Action mailed September 19, 2006. This response should obviate outstanding issues and make the pending claims allowable. Reconsideration of this application is respectfully requested in view of this response/amendment.

Claims 1 and 9 have been amended for clarification purposes only without adding new matter. Claims 14 through 16 have been newly added via the current amendment. Applicants wish to note that no new matter has been entered via the amendments to claims 14 and 16. Support for the amendment can be found in many citations in the application-as-filed, including, but not limited to, paragraphs 17 and 30 of the application-as-filed which specifically state that “the present invention utilizes a variable-length binary string to encode node identifiers”.

**STATUS OF CLAIMS**

Claims 1-13 are pending.

Claim 1 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement.

Claim 1 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6,889,226 (O’Neil et al.) in view of U.S. 6,263,332 (Nasr) and further in view of U.S. Pub. 2002/0120679 (Hayton et al.)

Claims 5-8 and 9-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub 20030110150 (O'Neil et al.), in view of U.S. Pub. 2002/0120679 (Hayton et al.).

### OVERVIEW OF CLAIMED INVENTION

The present invention teaches a method for prefix encoding node identifiers in a logical tree comprising steps of: choosing an initial base length with which to encode local identifiers, assigning a value of zero as a node identifier to a root node in a logical tree, sequentially assigning to descendants of a root node a local identifier having an even value and a length equal to said base length chosen in said choosing step, wherein said local identifiers are assigned in increasing value from leftmost children to rightmost children, assigning node identifiers by concatenating local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned, and extending said initial base length if local identifier encoding combinations are exhausted before all descendants are assigned local identifiers.

The present invention also teaches an article of manufacture having computer readable program code implementing the above-method.

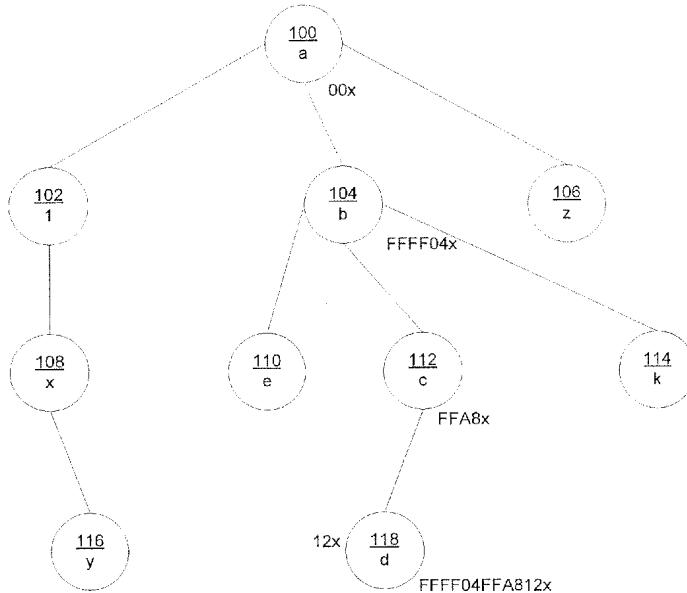
The present invention also teaches a method for prefix encoding node identifiers in a logical tree comprising steps of: choosing an initial base length with which to encode local identifiers, assigning a value of zero as a node identifier to a root node in a logical tree,

sequentially assigning to descendants of a root node a local identifier having an even value and a length equal to said base length chosen in said choosing step, wherein said local identifiers are assigned said even values based on variable-length binary string encoding and said local identifiers are assigned in increasing value from leftmost children to rightmost children, assigning node identifiers by concatenating local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned, and extending said initial base length if local identifier encoding combinations are exhausted before all descendants are assigned local identifiers.

#### REJECTIONS UNDER 35 U.S.C. § 112

With respect to claim 1, the Examiner states that the claim 1 is not supported by the specification as “the figures do not show concatenation of local identifiers nor do they show any paths from a root note to a node, which are currently being assigned an identifier.” Further, the Examiner also states that the feature of “assigning to all subsequent nodes, node identifiers generated by a concatenation of local identifiers of all nodes along path from a root node to a node to which a node identifier is currently being assigned” is not understandable to one of ordinary skill in the art. Applicants respectfully disagree with the Examiner’s statements.

For clarification, the Examiner is requested to refer to figure 1 and the accompanying description in the application-as-filed (which has been reproduced below to aid the Examiner).



**FIGURE 1**

It can be seen from the above-figure that the encodings for nodes *a*, *b*, *c*, and *d* are 0, FFFF04x, and FFA8x, and 12x, respectively. It can also be seen that the node id for *d* is FFFF04xFFA8x12x, which is a concatenation of the individual strings 0, FFFF04x, and FFA8x, and 12x.

The above-mentioned teaching is also reiterated in Figures 3 through 5.

Hence, Applicants respectfully submit that the “concatenation” feature of pending claim 1 is clearly supported by the specification-as-filed and the figures-as-filed.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 1-4 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,889,226 issued to O’Neil et al. (hereafter O’Neil), in view of U.S. Patent No. 6,263,332 issued to Nasr et al. (hereafter Nasr), and further in view of U.S. Publication No. 2002/0120679 issued to Hayton et al. (hereafter Hayton). To be properly rejected under 35 U.S.C. §103(a), each and every element of the claims must be addressed through known prior art or be recognized as an obvious variation thereof. Applicants contend that the combination of O’Neil, Nasr, and Hayton fails to provide many of the features of Applicants’ pending claims.

O’Neil provides for a technique to represent hierarchical data in a non-hierarchical data structure, wherein the hierarchical data (e.g., XML data) can be viewed as having a “tree” structure, and each node in the tree is assigned a position identifier that represents both the depth level of the node within the hierarchy, and its ancestor/descendant relationship to other nodes. According to O’Neil, the data represented by each node, as well as its position identifier, is stored in a row of a relational database, thereby capturing the hierarchical structure of the data in such relational database. O’Neil provides for compressed storage of position identifiers in a format that allows an efficient bytewise comparison of position identifiers to determine relative order and ancestry.

Nasr et al. teaches a computer-implemented method of retrieving information in a first markup language through a query engine and presenting the information in any required markup language is shown. According to Nasr, a user inputs a query to achieve one of two possible

outputs: (1) in the first usage, a query stands alone and the output of the engine is the information matching the query, and (2) in the second usage, transformative sequences are combined with queries. These sequences contain a markup language pattern and an action; the action may include transforming the tags in the first markup language to tags in a different markup language. The output of the engine in this second case is information matching the queries and transformed by the sequences specified. In either usage, the query is compiled from its source format into a sequence of instructions for the query engine. The compiled query is assigned tags and attributes. The database is then searched node by node for the corresponding tags and attributes. A predicate check using the binary coding of the node as well as ancestor and descendant information confirms the node. The leaf information associated with a confirmed node is then stored. If necessary, the action from the transformative sequence is applied to change the markup language of the leaf information to that of the user.

Applicants agree with the Examiner's conclusion that the neither the O'Neil reference nor the Nasr reference teaches claim 1 and 9's feature of assigning node identifiers by concatenating local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned. However, Applicants respectfully disagree with the Examiner that such a feature of claim 1 and 9 is remedied by the Hayton reference.

Hayton merely teaches the features of: (1) associating an element of a user-interface to a current state of a property of an application where the application has a plurality of components having properties and each property being identified with an identifier, and (2) concatenating of a plurality of identifiers.

First, Applicants respectfully contend that the Hayton reference could not have been combined with O’Neil and Nasr by one of ordinary skill in the art, as there would have been no teaching, suggestion, or motivation for allowing such a combination. Specifically, although O’Neil and Nasr deal with structured documents, Hayton merely deals with “user interfaces”. In Hayton’s own words, their invention relates to “client-server networks” and refers to “client nodes” and “server nodes” (for example, see paragraphs [0002] through [0008]). The solitary mention of XML documents occur on in paragraph [0047], where Hayton mentions that that a component 34 could collectively represent nodes in an XML file and makes no mention of prefix encoding node identifiers. Applicants respectfully assert that one of ordinary skill in the art would have not been able to combine such teachings without a teaching, suggestion, or motivation.

The Examiner is reminded that, in order to establish a case of *prima facie* obviousness there must also be shown a motivation to combine the teachings of the cited references, namely O’Neil, Nasr, and Hayton. To that end, some suggestion of the desirability to combine the references must be found and demonstrated in the references. **This burden cannot be satisfied by simply asserting that the modification would have been “well within the ordinary skill of the art.”**

As the CAFC stresses for a §103 rejection to stand, the Examiner is required to show **with evidence** the motivation, suggestion or teaching of the desirability of making the specific combination at issue. That evidence is required to counter the powerful attraction of a hindsight-

based obviousness analysis. See, for example, *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references"). It is respectfully submitted that this involves more than a mere bold assertion that it would be obvious to combine the cited references. With respect, the Examiner has failed to indicate why one of ordinary skill in the art would be motivated to combine the teachings of O'Neil, Nasr, and Hayton. *In re Lee* requires that the record must state with particularity all the evidence and rationale on which the PTO relies for a rejection and sets out that it is necessary to explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.

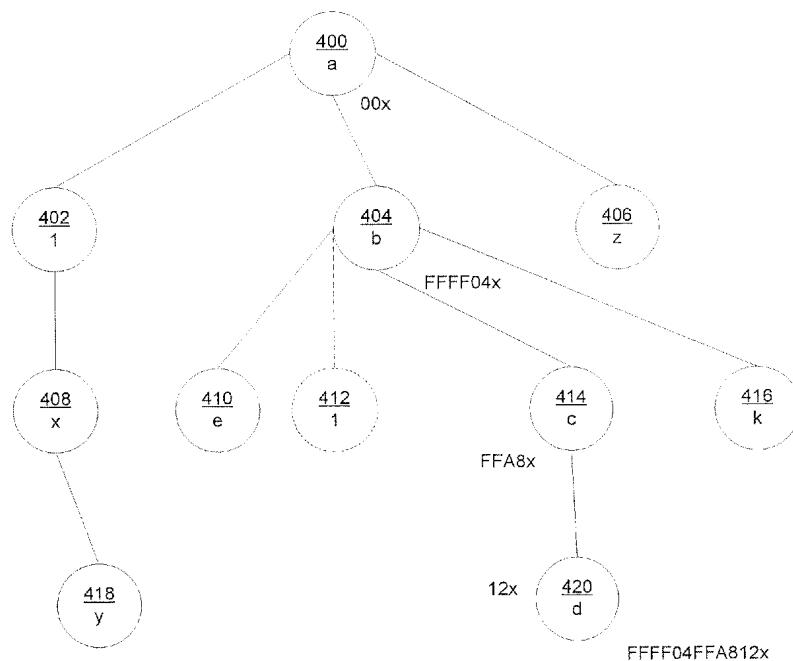
Under *Lee*, the PTO must state in writing the evidence on which it bases its rejection. With respect, the present office action falls short of this requirement.

Applicants submit that there is no suggestion of the desirability to combine the O'Neil, Nasr, and Hayton references, nor is there any motivation demonstrated in either of the references to combine them, nor is there any suggestion in either reference to adapt their teachings to provide the unique features of the present invention. Applicants also respectfully submit that the Examiner has failed to show, with evidence, a motivation, suggestion or teaching of the desirability of making the specific combination at issue. For the foregoing reasons, reconsideration is respectfully requested.

Furthermore, even for argument purposes, it is assumed that references were to be combined; Applicants respectfully maintain that such a combination would not teach the features of Applicants' pending claims 1 and 9. Specifically, Applicants respectfully assert that the feature of assigning node identifiers by concatenating local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned is neither taught nor suggested by Hayton, as asserted by the Examiner.

As mentioned above, Hayton makes a solitary mention only in paragraph 47 regarding structured XML data files. Specifically, Hayton mentions in paragraph 47 that application components 34 can collective representations of nodes in a data file, such as an XML file, where **properties identifiers are attributes specified in the structure file**. Further, in Hayton's own words, the concatenation is performed on such identifiers or attributes specified in a structure file and NOT, as the Examiner asserts, **concatenating local identifiers of all nodes along a path from a root node to a node to which a node identifier is currently being assigned to assign a node identifier**.

For clarification of claims 1 and 9, the Examiner is respectfully requested to review figure 4 of the application-as-filed, where claim 1 and 9's concatenation feature is outlined.



**FIGURE 4**

It can be seen from the above-figure that what is concatenated as per Applicants' invention is the encodings for nodes a, b, c, and d, whose values are 0, FFFF04x, and FFA8x, and 12x, respectively. Such a concatenation results in a node id for d with a value of FFFF04xFFA8x12x, which is a concatenation of the individual strings 0, FFFF04x, and FFA8x, and 12x.

If the examiner still feels that that Hayton teaches such a concatenation feature, Applicants respectfully remind the examiner that it is the duty of the examiner to specifically point out each and every limitation of a claim being rejected as per §1.104(c)(2) of Title 37 of the Code of Federal Regulations and section 707 of the M.P.E.P., which explicitly states that “the particular part relied on must be designated” and “the pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified”.

Hence, Applicants respectfully disagrees with the Examiner that the prior art either alone or in combination teaches or suggests the claimed invention. Applicants submit that a prima facie case of obviousness has not been successfully established with respect to independent claims 1 and 9. Applicants believe that claims 1 and 9 are allowable over the cited art for the reasons set forth above.

The arguments presented above substantially apply to dependent claims 2-8, 10-15 as they inherit all the features of the claim from which they depend. Hence, Applicants believe that dependent claims 2-8 and 10-15 are allowable over the cited art for the reasons set forth above.

The arguments presented above also substantially apply to new independent claim 15 as it recites many similar features.

Further, Applicants wish to note that none of the art of record, i.e., O'Neil, Nasr, or Hayton, teach or suggest local identifiers being assigned even values based on **variable-length binary string encoding**. Absent such a teaching, O'Neil, Nasr, or Hayton, either singularly or in combination, CANNOT render obvious Applicants' independent claim 15.

Applicants, therefore, submits that a prima facie case of obviousness has not been successfully established with respect to independent claim 15. Applicants believe that claim 15 is allowable over the cited art for the reasons set forth above.

SUMMARY

As has been detailed above, none of the references, cited or applied, provide for the specific claimed details of applicants' presently claimed invention, nor renders them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

As this response has been timely filed, no request for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge any deficiencies in the fees provided to Deposit Account No. 09-0460.

If it is felt that an interview would expedite prosecution of this application, please do not hesitate to contact applicants' representative at the below number.

Respectfully submitted,

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